

REMARKS

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111, and in light of the remarks which follow, are respectfully requested.

In the Amendment, claim 1 has been amended to incorporate the subject matter of claim 3. Claims 3 and 6 have been canceled. Claims 2 and 7 were previously canceled. No new matter has been added. Upon entry of the Amendment, claims 1, 4, 5 and 8 will be all the claims pending in the application.

I. Response to Rejection under 35 U.S.C. § 102(b)/103(a)

Claims 1, 3-6 and 8 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly obvious over WO 02/064363 to Okamura et al. (with the Examiner relying on corresponding U.S. Patent No. 7,338,716 as an English language equivalent of WO '363). Applicants respectfully submit that the claims as amended are novel and patentable over Okamura for at least the following reasons.

Independent claim 1 recites a polyimide metal laminate comprising, *inter alia*, a polyimide resin which comes in contact with a stainless steel foil or a cooper foil, and which is obtained by combining at least one kind of tetracarboxylic acid dianhydride with 3,3',4,4'-benzophenone tetracarboxylic acid dianhydride (BTDA) selected from pyromellitic acid dianhydride, p-phenylene bis(trimellitic acid monoester anhydride), 3,3',4,4'-ethylene glycol dibenzoate tetracarboxylic acid dianhydride and 2,2-bis(4-hydroxyphenyl)propane-3,3',4,4'-benzophenone tetracarboxylic acid dianhydride, wherein 3,3',4,4'-benzophenone tetracarboxylic acid dianhydride is used not less than 5 mole % and not more than 50 mole %

of the total tetracarboxylic acid dianhydride in use, and pyromellitic acid dianhydride (PMDA) is used not less than 50 mole % of the total tetracarboxylic acid dianhydride in use.

The recited polyimide resin used in a polyimide metal laminate can provide adhesion property and etching property at a high level.

Okamura describes that a polyimide resin layer "(B)" comes in contact with a metal foil. In addition, Okamura describes that a polyimide resin layer "(A)," which the Examiner relied on in Office Action, does not come in contact with the metal foil.

The desired properties are different between the polyimide resin layer (A) and the polyimide resin layer (B) described in Okamura. Specifically, since the polyimide resin layer (A) does not come in contact with the metal foil, the polyimide resin layer (A) is not required to provide improved the adhesive property on a metal layer and thus PMDA is used in large amounts for improving the etching property. For at least this reason, one of ordinary skill in the art would have had no motivation to substitute the polyimide resin layer (B) for the polyimide resin layer (A) in Okamura.

Furthermore, regarding the polyimide resin layer (B), Okamura describes in Col. 4, lines 23-29, that "PMDA is added in an amount corresponding to preferably 80 mol % or less, more preferably 10-60 mol %, of the total dianhydrides because it raises the Tg." In light of this description, one of ordinary skill in the art would understand that the amount of PMDA is required to be lower in order to improve adhesiveness by low Tg. This feature is clear by the upper limit set for the amount of PMDA and is further demonstrated by the amounts of PMDA employed in Examples of Okamura.

Specifically, the table below summarizes the amounts of BTDA and PMDA in a tetracarboxylic acid dianhydride in use of a polyimide resin layer (B) for Examples of Okamura (Table 2):

Polyimide Precursor Solution No.	BTDA/(BTDA + PMDA) (mol%)	PMDA/(BTDA + PMDA) (mol%)
H	57.8 (*1)	42.4 (*2)
I	57.4	42.6
J	57.6	42.4
K	57.8	42.4
L	57.3	42.7
M	57.5	42.5
N	57.3	42.7
O	57.7	42.3

Mw of BTDA is 358. Mw of PMDA is 218.

*1: $0.057 \text{ mol} / (0.042 \text{ mol} + 0.057 \text{ mol}) \times 100\% = 57.6 \text{ mol}\%$

*2: $0.042 \text{ mol} / (0.042 \text{ mol} + 0.057 \text{ mol}) \times 100\% = 42.4 \text{ mol}\%$

As the results in the above table show, in Okamura, the amounts of PMDA and BTDA in a tetracarboxylic acid dianhydride of a polyimide resin layer (B) are about 42 mol% and 58 mol%, respectively.

On the other hand, as set forth above, in the polyimide resin used in a polyimide metal laminate recited in present claim 1 which comes in contact with the stainless steel foil or the cooper foil, PMDA is used not less than 50 mole % of the total tetracarboxylic acid dianhydride in use. The amounts employed in Examples of Okamura are outside the ranges recited in present claim 1.

Further, in the presently claimed invention, the polyimide resin causes little deterioration of an adhesive property. Moreover, the polyimide resin used in the polyimide metal laminate can satisfy an adhesion property and an etching property at a high level. These results are unexpected to one of ordinary skill in the art in light of the disclosure of Okamura.

In view of the foregoing, Applicants respectfully submit that claim 1 is novel and patentable over Okamura and thus the rejection should be withdrawn. Additionally, claims 4,

5 and 8 depend from claim 1, directly or indirectly, and thus are patentable over Okamura at least by virtue of their dependency.

II. Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (202) 452-7932 at his earliest convenience.

Respectfully submitted,

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